



NEWSLETTER No. 37 - FEBRUARY 1983.

# The Black Country Geological Society

## Editorial.

You all have an advantage over me for this newsletter, since you have been around here in January and I have not. I am still trying to wake up after over 20,000 miles to Antarctica and back, and my first sight of penguins, which was also over 20,000, so if I sound a little disorientated, please be gentle.

I have been delighted with the response to my request for contributions, so it is only fair to draw attention to the approaching Annual General Meeting. It is good for committee members to change around, bring new ideas, and also avoid being overworked and having their good natures put upon. So, all you new and old members, how about thinking in what way you could volunteer yourselves or your friends? Yes, I know I said I'm shy, but don't do as I do, do as I say.

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## Next Meeting.

20th. February. Sunday. No preliminary meeting. A field trip to Cotwall End and other nearby sites led by Alan Cutler. This trip will be far more suited to members of the Society than similar trips led by Alan for the Countryside Commission. Meet outside the Allied Centre at 10am. Please bring a packed lunch.

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Meetings are held in the Allied Centre, Green Man Entry, Tower Street, Dudley, behind the Malt Shovel pub. Indoor meetings commence at 8pm. with coffee and biscuits from 7.15pm. Field meetings will commence from outside the Allied Centre unless otherwise arranged. Those who would like lifts, please contact Anne Harrison.

Non-members welcome.

The Society does not provide personal accident cover for members and visitors on field trips. You are strongly advised to take out your own personal insurance cover to the level which you feel appropriate. Schools and other bodies attending field trips should arrange their own insurance as a matter of course.

*Chairman*  
A. Cutler B.Sc., M.CAM.,  
Dip.M., M.Inst.M.

*Vice Chairman*  
P. G. Oliver B.Sc., Ph.D.,  
F.G.S.

*Hon. Treasurer*  
M. J. Woods B.Sc., M.Sc.,  
M.I.Geol., F.G.S.

*Hon. Secretary*  
P. D. Shilston M.A., C.Eng.,  
F.I.E.E., M.I. Mech.E.

*Field Secretary*  
Anne Harrison B.Sc., M.B.,  
Ch. B., F.F.A.R.C.S.

Programme 1983.

March 14th. Annual General Meeting and Horizon film "When Polar Bears Swam in the Thames", about the British Ice Age.

Weekend Field Trip to Weston-Super-Mare.

Fri. 18th March to Sun. 20th. Led by Tina Ford and Bill Draper of Bristol Museum and Art Gallery who have recently been conducting their own geological survey of the area.

Fri. 18th March. Meet at hotel for supper at 7.30pm.

Sat. 19th. am. Lower Carboniferous Succession of Avon Gorge.

Fm. Investigation of coastal succession near Portishead.

Sun. 20th. Study of the volcanic suite within the Lower Carboniferous in Weston-Super-Mare, am. & pm.

If anyone has other suggestions for sites they would like to see, please let me know and Tina and Bill will try to arrange it.

Accommodation: 10 twin-bedded rooms and 2 single. These will be allocated to the first people who request them.  
Cost - £28.

Last year there was a rush for places after the closing date. This year we need at least 16 people staying in the hotel to make the trip viable. Therefore please book early to ensure that the trip actually happens. I shall show no mercy! If the trip is still happening, anyone who books late will need to find their own accommodation. A.H.

April. Field trip being arranged.

May 9th. "Palaeomagnetism applied to Sedimentology". Lecture by Dr. F. Turner of Aston University.

June. There will be two evening field trips.

July. Field trip being arranged.

September. Lecture.

October 23rd. Joint field trip with Shropshire Geological Society to Black Country sites.

December. "The Biology of Trilobites" Lecture by Dr. P.E. Lane of Keele University.

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Field Trip to the Central Pennine Basin. Sept. 26th. 1982.  
Leader, Peter Whitehead.

Our party gathered at the car park in Edale village at 11am. and spent the morning walking up the succession exposed along the start of the Pennine Way, in Grindsbrook Clough. This Namurian sequence shows many interesting features.

The lowest member of the sequence is the Edale Shale, but this is only rarely exposed here. Head obscures the shales, and the first member seen is the Mam Tor Series, which is an alternation of shales and coarse sandstones. These represent turbidite units which began the filling in of the basin. The first exposure of this can be seen at the point where the path crosses Golden Clough.

Ascending the stream of Grindsbrook, the next member is the Shale Grit, in which the sandstone units are much thicker than the shale units. This member represents proximal turbidites, as opposed to the distal turbidites of the Mam Tor beds. Some sizable submarine channels occur within the Shale Grit, cut and filled by the turbidity currents.

Above the Shale Grit comes the Grindslow Shale, which has characteristics similar to many Coal Measure shales from higher up the stratigraphic sequence. It is interpreted as delta-top material, although plant fragments seem rare.

Capping the Kinderscout plateau

is the Kinderscout Grit, a coarse, badly sorted cross-bedded sediment. It marks the final transition from marine to continental conditions, and is usually interpreted as alluvial material.

We descended Grindsbrook in heavy rain and reached Edale village, where several members took refuge in the Hag's Head, presumably only to avoid the hail which accompanied the lunchtime storm!

A short drive over Rushup Edge in clearing weather, took us near the Blue John Cavern at the foot of Mam Tor. Here the Edale Shale was more accessible, and also the full thickness of the Mam Tor beds could be appreciated.

The Edale Shale is black, partly due to carbon but mostly to iron sulphide, which shows itself by the weathering surfaces of limonite and sulphur. These basinal shales have a fauna of pelagic bivalves and goniatites. Selenite also appeared in some quantity.

The turbidites of Mam Tor yielded a range of sedimentary structures, including groove casts, flutes and ripples. Some arthropod trails turned up. Would any Cruzians like to identify them?

Peter Whitehead.

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"Meteorites - Building Blocks for Planets." Sept. 13th. 1982.  
Lecture by Dr. John Ashworth of Aston University.

This lecture began with definitions of a meteor as a shooting star, and a meteorite as a rock from the sky which has reached the ground, possibly with spectacular lights at night or a sonic boom. Tectites are small glassy blobs formed by spinning; and most meteorites land as an elliptical

area of fragments, rather than forming a crater like the prehistoric one in Arizona. Of the two main types, stony meteorites break up more than iron ones.

Typical features of a meteorite include a thin fusion crust, with ridges and furrows caused by travel through the atmosphere. Below a few mm. of crust, the interior is unaltered from the preterrestrial state. The trajectory has been calculated on a few occasions, and agrees with an origin in the asteroid belt.

When the ages of the rocks are calculated from radioactive decay, the oldest earth rocks known are 3,800m.y. The moon ones are older, especially in the highlands where they are up to 4,500 m.y. Meteorites peak at 4,500-4,600 m.y. and therefore represent primordial planetary material.

Of the types of meteorites, iron-nickel ones when polished and etched show a criss-cross pattern. Stony ones in thin section are rather like terrestrial igneous rocks, with pyroxenes and feldspars but with a different chemistry. Chondrites are of silica minerals, and contain globular chondrules of 1-5 mm. in size, composed of olivine, pyroxene and feldspar. The chondrules are thought to originate as drops of melt, and they may have been fragmented. The process producing them is not known. Carbonaceous chondrites are rare, having no chondrules but with hydrocarbons and hydrated silica minerals similar to solar composition.

The chondrites are primary building blocks from which all other rocks could be differentiated. Gravitational fields attract fragments to form planets.

The Asteroid Belt is not an exploded planet, but one where formation was arrested for lack of material perhaps when Jupiter was formed. A planet when formed will produce heat from radioactive decay, and from impact. At 900°C iron and nickel will melt, followed

by silicates, and differentiate a core, with volcanism occurring later.

Questions followed this most stimulating talk. The first concerned the orbits of fragments. Those most elliptical would be likely to impact first. The Asteroid Belt is stable. A source further out is more likely for carbonaceous chondrules, but they are rare on Earth, being friable and less likely to land.

The Japanese discovered many unweathered meteorites in Antarctica 8 years ago, in areas of blue ice which flowed into closed basins and concentrated the fragments, including a few carbonaceous chondrules.

The next question was about the nebular hypothesis, about collapsing condensation of spinning material forming the nucleus of stars. The outer part cools and material begins to coalesce.

Iron meteorites might be so condensed in the Asteroid Belt, with enough heat to melt iron. Fourteen groups of trace elements have been found. Most iron meteorites are larger than stony ones, and may weigh some tons.

The composition of other planets is likely to be chemically similar but Mercury may have more metal. The large planets are of low density. Jupiter is not quite large enough to start nuclear fusion and become a star. Mars and Mercury have very little magnetic field, and the Moon none. To have a magnetic field, it is necessary to have a fluid core.

The lecture produced a very lively question time, and the expert answers were quite as interesting as the speaker's main theme. We were all in danger of staying the night without realising it, as we pored over specimens and questions began all over again.

Sheila Pitts.

Letters to the Editor.

Dear Sheila,

I would be grateful to hear of any members who have been down to Dorset recently. I would like any news of out-of-the-way exposures, however small, and temporary exposures that people may come across.

Also, if anyone collects Jurassic rocks or fossils from anywhere in the U.K. and cannot identify them, please bring them along to the meetings.

Peter Knight.

I have also had a Christmas card from Graham Hickman, who has had had an enjoyable year with B.P. and has now been associated with his first "dry well"!

Editor.

From the Papers.

Quarry Plan is Facing Protests.  
(Express & Star, 11.8.82.)

Amey Roadstone Corporation is carrying out test drillings for sand and gravel at Calcot Hill, Bell End near Clent. Local residents are forming an action group to fight the quarry plans if planning permission is sought.

Photograph for University. (Express & Star 23.5.82.)

A photograph of Charles Lapworth when he was on a field trip at Cotwall End Valley, Sedgley, rescued after a house clearance, has been donated to Birmingham University Geology Dept. Archie Williams of The Straits on behalf of a friend contacted the Society in December 1981. He was put in touch with Dr. Strachan who ultimately received the photograph for the Geology Dept. Apparently Lapworth's visit had caused local speculation that gold might occur at Cotwall End!

Beauty Spot Quarry Rejected. (Express & Star 29.10.82.)

Amey Roadstone Corporation has abandoned all plans for quarrying at Bell End, since exploratory drillings were disappointing.

# Limestone diggings to be probed

A long-term project aimed at dealing with risks of ground movements from old limestone workings in Sandwell, Walsall and Dudley is all set to take a new step forward.

A £150,000 contract has been announced for drilling operations in Wednesbury.

The research project was announced last June by Mr Tom King, the Minister for Local Government and Environmental Services.

The aim is to investigate former limestone workings in the Black Country, which were started back in the 18th and 19th centuries and never properly recorded.

A government spokesman said today: "Over recent years there has been a growing number of minor collapses.

"Something has to be done, and the research project was decided upon to find out exactly what state the workings are in, to establish the risk of ground movements and to recommend what measures should be taken to deal with any."

The project — expected to be completed by March next year — is in the hands of Birmingham consultant engineers, Ove Arup and Partners.

They have now finished the "desk study" work by looking at available documentation, and the Wednesbury contract has been awarded for physical investigations on the site

of former workings between Darlaston Road and Old Park Road.

The West Yorkshire firm of Geotechnical Engineering (Northern) Ltd. will start work early next month, using a small drilling rig to drill a number of holes to the 660 ft depth of the old workings.

## Analysed

Core samples will be analysed, and specialised instruments — sonar equipment in wet conditions and laser beams in dry — will be used at different depths to record rock movements.

Television cameras will be used once the holes are finally drilled to help build up the picture.

A second contract — for a £50,000 micro-seismic survey — has also been announced as part of the research project to investigate former workings at two sites in Dudley and one in Walsall.

The survey aims to record ground vibrations at the Dudley Sports Centre, at nearby Castle Hill in Dudley, and at Daw End in Rushall.

Work at these sites, which started at the end of last month, should be over by February of next year.

It is being tackled by Alta Geophysics, a firm based at Birmingham University.

The project as a whole is being jointly funded by the Environment Department and four local authorities — Sandwell, Dudley and Walsall boroughs and West Midlands County Council.

# New phase in limestone survey probe

The second phase of an investigation into the underground limestone workings in Walsall will get under way this autumn.

Reprinted  
from  
Express  
&  
Star  
July  
1982.

The £200,000 survey — carried out by the Department of the Environment — will attempt to match up recorded information with physical evidence, investigate the full extent of workings, and make recommendations as to how they can be made stable for land development.

All recorded information and historical documents relating to workings in Walsall, Dudley and Sandwell have already been studied by engineers and the investigation has now moved into its second stage with a "physical study" of sites in the three areas.

Tests have started in the borough of Sandwell and will begin in Walsall in late September or early October. A detailed report on the findings will be issued early in 1983.

Mr Don Peacock, Walsall's deputy director of engineering, said that the borough was one of the most extensively worked for limestone in the Midlands and workings wore up to a depth of 600ft.

## Largest

He said that Dudley had probably the largest number of workings in the area, although these were shallower than those in Walsall.

Many authorities, including Walsall, have blocked development on suspect sites following a court case which made them liable if they allowed building to take place on areas with stability problems, such as mining or tipping sites.

It was a step in the right direction that the Department of the Environment had acknowledged the town's workings as being "a problem above the normal level," he added.

Two sites in Darlaston Road and Littleton Street have been selected for tests which include boring holes and using lasers, cameras and sonar to look at the underground caverns and condition of the rock.

## Hopes are raised for Kew Mine.

(Express & Star 31.8.82.)

The National Coal Board has decided to drill two more holes at Chasetown. Cannock Mines want a new drift mine to replace West Cannock Colliery which is nearly exhausted. The N.C.B. has said that at least a year's test drilling is necessary to prove reserves and identify problems including water bearing formations.

Geology Courses.

- 1) Geological Evolution of Wales. Symposium on Sat. Dec. 11th. Cardiff.  
Details from Alun Thomas, Dept. of Geology, National Museum of Wales, Cardiff, CF1 3NP. Tel. 0222 397951.
- 2) Geology of Pembrokeshire. April 2-9. About £68.  
University of Manchester, Dept. of Extramural Studies, University, Manchester M13 9PL
- 3) University of Leicester, Miss E. Sunderland, Dept. of Adult Education, Vaughan College, St. Nicholas Circle, Leicester, LE1 4JB.  
Iceland, geology, ornithology, botany. July 23rd-Aug. 6th. £499. Camping.  
Spanish Pyrenees. July 1-17 and Aug. 12-28. Geology, Flora and wildlife. £330.  
Malverns. May 13-15. £49.  
Forest of Dean. May 27-30. £58.  
Cotswolds. Sept. 16-18. £40.
- 4) Wessex in Wales. Open University field course at Kings, Dolgellau, Gwynedd, LL40 1TE. Mr. Graham Hall. April 29-May 2. (No price.)
- 5) Welsh Mines Society.  
Metal and Slate Mining in Wales. May 28-30. £19.  
Kings Youth Hostel, Dolgellau as above.
- 6) Geology in Norway. July 9-21. About £450.  
Dept. of Extramural Studies University of Bristol, 32 Tyndall's Park Rd. BS8 1HR
- 7) Mines of the Peak District. March 4-6. £45.  
Peak National Park Study Centre, Losehill Hall, Castleton, Derbs. S30 2WB.
- 8) Herdman Geological Society, University of Liverpool.  
Caledonian and Pre-Caledonian Geology of Anglesey. Feb. 26. £2. Possible field trip 27th.  
Jane Herdman Geology Lab. Brownlow St. P.O. Box 147, Liverpool L69 3BX.

Committee Dates.

Mondays at 8pm. at the Allied Centre.

<u>General.</u>	<u>Conservation.</u>
Feb. 7th.	
March 7th.	March 28th.
April 18th.	May 16th.
June 27th.	July 18th.
Sept. 5th.	Sept. 26th.
Nov. 7th.	Nov. 21st.

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Welcome to New Member:-

Steven Hughes - Erdington.

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Advertisement.

Hampshire Micro, 57 New Market Sq. Basingstoke, Hants. RG21 1HW.

This company specialises in stereoscopic microscopes and magnifiers for the dedicated amateur. Its leaflets look both interesting and not too highly priced (as such things go!) I have sent the leaflets back to Paul Shilston.

Editor.

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Editor. Sheila Pitts, 17 The Pear Orchard, Northway Farm, Tewkesbury, Glos. GL 20 8RG.

Hon. Sec. Paul Shilston, 16 St. Nicolas Gardens, Kings Norton, Birmingham B38 8TW. Tel. 021-549-3603.

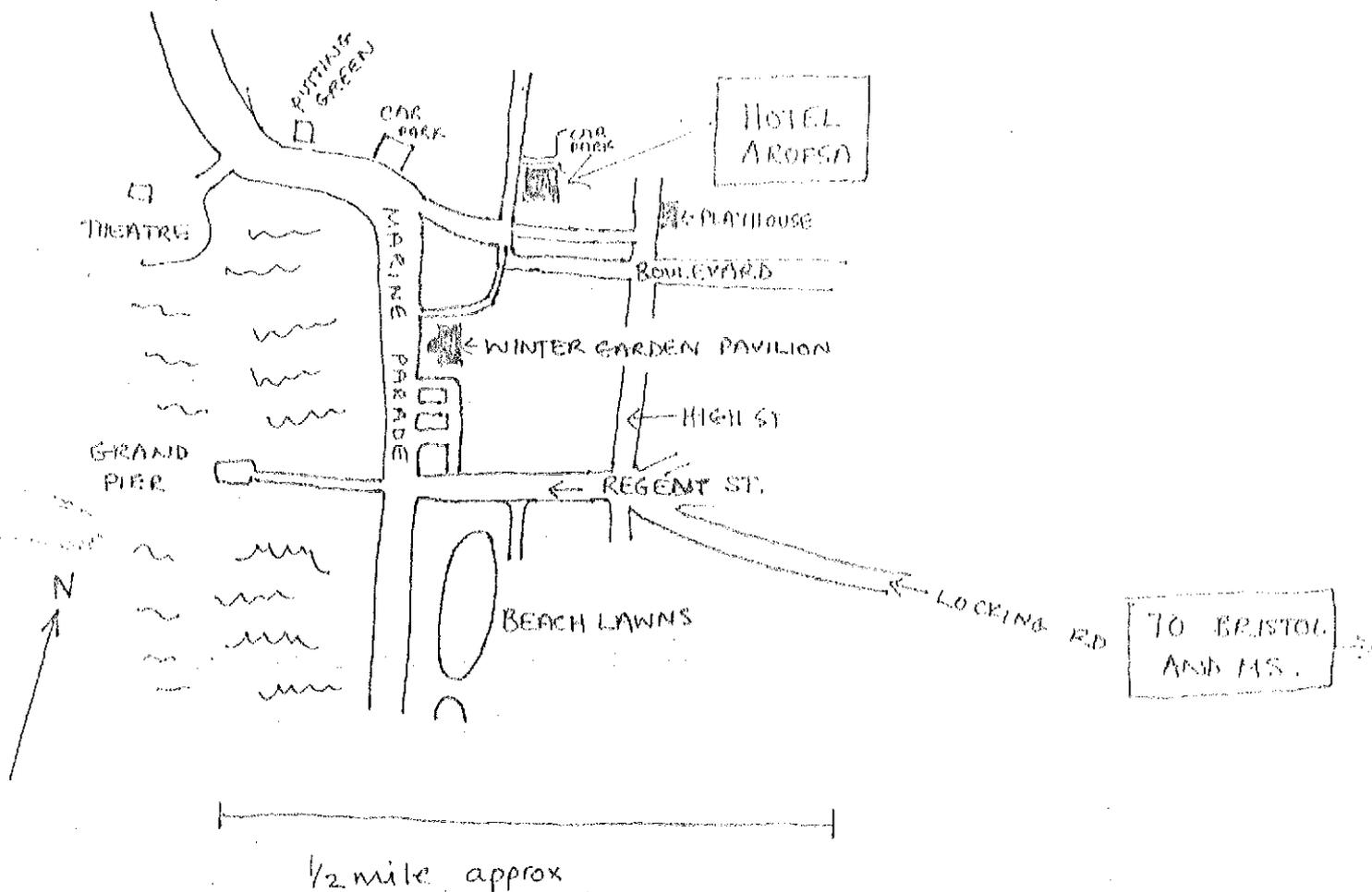
Field Sec. Anne Harrison, 15 Duncombe Grove, Harborne, Birmingham B16 8SJ. Tel. 021-429-1818.

John Easter, 27 Wailawn Drive, Kingswinford, West Midlands, DY6 9PE. Tel. Kingswinford 4916.

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AROFSA HOTEL  
LOWER CHURCH ROAD,  
WESTON-SUPER-MARE

N.B. This is only an attempt  
to get the map to scale. ∴  
distances are approximate.



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Please fill in and return to Anne Harrison, 15 Duncombe Grove, Harborne,  
Birmingham B16 8SJ, by February 25th.

I would like to book..... places on the week-end field trip and  
enclose a deposit of £10 per person.  
My total deposit is £..... payable to the Black Country Geological Society.  
I would prefer a single/twin room (delete as applicable)  
I/we do not require accommodation (no deposit required)  
Name.....  
Address.....  
.....  
Tel.....

BLOCK CAPITALS PLEASE.

BLACK COUNTRY GEOLOGICAL SOCIETY.

Notice is hereby given that the eighth Annual General Meeting will be held on Monday 14th March 1983 at 8pm in the Allied Centre, Dudley.

AGENDA.

1. Apologies for absence.
2. Minutes of the AGM held on 22nd March 1982.
3. Statement of accounts and Treasurer's report.
4. Chairman's annual report.
5. Election of officers and committee.
  - (a) Chairman
  - (b) Vice chairman
  - (c) Hon.secretary
  - (d) Hon.treasurer
  - (e) Conservation secretary
  - (f) Field secretary
  - (g) Three committee members
  - (h) Hon.auditor
6. Any other business.

The retiring officers and committee are :-

Chairman	A Cutler
Vice chairman	Dr P G Oliver
Hon.secretary	P D Shilston
Hon.treasurer	M J Woods
Conservation secretary	-----
Field secretary	Mrs A Harrison
Committee members	J Easter
	M P Coles
	N G Bradley

SUBSCRIPTIONS 1983

Membership subscriptions are now due, and should be paid to the Hon.Treasurer :

Mr.M.J.Woods  
132 Mount Road  
Penn, Wolverhampton.

Subscriptions can also be paid at any meeting.

SUBSCRIPTION RATES ARE AS FOLLOWS :

Individual membership	£5.00 per annum.
Family membership	£7.00 "
Student membership	£2.50 "
Associate/group membership	£10.00 "

-----CUT HERE-----

BLACK COUNTRY  
GEOLOGICAL SOCIETY.

NAME.

ADDRESS.

Telephone;

I/We enclose £ ..... for ..... membership. Date:-